Chapter 4. ENVIRONMENTAL IMPACT ANALYSIS AND CUMULATIVE EFFECTS

This chapter addresses the impacts and cumulative effects of the proposed project (changes to the commercial herring fishing regulations) on the existing environment described in Chapter 3 of this document and Chapter 3 of the FED. The proposed project and two of the three alternatives will permit a continuation of the regulated commercial harvest of Pacific herring in California. An analysis of the impacts of the proposed project and the option of reducing the minimum mesh size to 2-in. in the San Francisco Bay fishery is discussed in Section 2.3.1.5 of this DSED.

Existing regulations permit the commercial harvest of herring in five geographical areas: San Francisco Bay, Tomales Bay, Humboldt Bay, the Crescent City Harbor area, and the open ocean. Chapter 4 of the FED examined the environmental sensitivity of each of these areas at existing harvest levels. Thirteen environmental categories were considered, including: land use, traffic circulation, water quality, air quality, housing, public utilities, geological, biological, archaeological, scenic, recreation, noise, and growth inducement. Three categories (land use, archaeology, and growth inducement) were considered to have no environmental sensitivity to commercial herring fishery activity in any of the five geographical areas and were not considered in the impact analysis. Potential impacts relative to the above categories were reexamined annually and addressed in the SED. The basis for this assessment is provided in detail in section 4.1 of the FED.

Section 4.2 of the FED provided a detailed impact analysis for the ten categories found to have environmental sensitivity to commercial herring fishery activity. Potential impacts to traffic circulation, water quality, air quality, housing and utilities, geology, scenic quality, recreational opportunities, and noise levels that were identified as an aspect of herring fisheries varied in degree with geographic area, but all were considered to be localized, short-term, and less than significant.

Some of these potential impacts are mitigated by various existing regulations.

Section 4.2.6 of the FED provided a detailed analysis of the potential environmental impacts to biological resources that exist from commercial herring fisheries. The proposed project adds no new impacts to be analyzed.

Errors in stock assessments was identified as an area of controversy and addressed in within Chapter 3 of the FED. As presented in Section 3.2.3 in this DSED, and in Section 3.2.1 of the 2004 FSED, the Department requested that the peer review include an assessment of the methodology used in formulating the annual season spawning biomass and resulting harvest level for the San Francisco Bay fishery. The reviewers concluded that a potential for overestimating the population existed when the higher of the two estimates was assigned on a spawning wave by spawning wave basis and recommended that the Department use the spawning escapement surveys to base harvest levels. The Department followed the recommendation of the peer review panel consistent with its adaptive management strategy. The proposed quota for the 2005-06 San Francisco Bay fisheries is based solely on the results of the spawn escapement survey.

The FED divided potential impacts into two categories: (1) direct harvest impacts; and (2) trophic level impacts. Short and long term potential adverse impacts exist within each of these categories. Many of these potential impacts are mitigated by current management practices including annual stock assessments and regulations that control harvest and fishery impacts. Others are considered localized, short-term and less than significant.

Chapter 5 of the FED provided a detailed analysis of the factors that have the capacity to influence future Pacific herring population status in California in addition to the existing herring fisheries or alternatives (cumulative effects). The proposed project introduces no new cumulative effects to those addressed by the FED. The FED discussed in detail the factors with greatest potential for cumulative effects, including: continued commercial harvest of herring, unusual biological events, competitive interactions with other pelagic fish, unusual weather events, habitat loss, and water quality. Mitigation for these potential cumulative effects will be provided

by annual stock assessments, annual changes in the level of harvest, or the selection of a no fishery alternative.

The Department identified and addressed impacts and cumulative effects of the proposed project on the existing environment described in Chapter 3 of the FED, subsequent FSEDs, and this DSED. Potential impacts as a result of the possible reduction in the minimum mesh size in San Francisco Bay, were identified and discussed in Section 2.3.1.5 of this DSED. No other impacts were identified that were not already addressed in the FED or prior FSEDs. Other impacts identified were determined to be localized, short-term, and less than significant.